

Academic Year: ( 2022 / 2023 )

Review date: 29-09-2022

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: RIVERA RIQUELME, FRANCISCO ANTON

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

**OBJECTIVES**

- Knowledge and understanding of Production Systems and Industrial Organization.
- Ability to identify engineering problems within the industrial field, to establish different resolution methods and to select the most appropriate one for their solution.
- Ability to design Production Systems that comply with the required constraints, collaborating with professionals in related technologies within multidisciplinary teams.
- Ability to apply their knowledge and understanding to solve problems and design processes in the field of Industrial Engineering in accordance with criteria of cost, quality, safety, efficiency and respect for the environment.
- Skills for the practice of engineering in today's society.

**DESCRIPTION OF CONTENTS: PROGRAMME**

Introduction to Operations Research  
 Modeling with Linear Programming  
 The Simplex Method  
 Sensitivity Analysis  
 Duality and Post-Optimal Analysis  
 Integer Linear Programming  
 Simulation of Production Systems  
 Generation of Random Variates  
 Comparison of Alternative System Configurations

**LEARNING ACTIVITIES AND METHODOLOGY**

Lectures, exercises and practical sessions. Face-to-face tutorials.

**ASSESSMENT SYSTEM**

60% Final written exam.

40 % Continuous evaluation. One partial exam will be held. Attendance to the practical sessions.

**% end-of-term-examination:** 60

**% of continuous assessment (assignments, laboratory, practicals...):** 40

**BASIC BIBLIOGRAPHY**

- Bazaraa, M.S.; Jarvis, J.J.; Sherali, H.D Programación lineal y flujo en redes, Limusa, 2004
- Hillier, F.S.; Lieberman, G.J Introducción a la investigación de operaciones, McGraw-Hill, 2010
- Law, A.M Simulation Modeling and Analysis, McGraw-Hill, 2015
- Taha, H.A Investigación de operaciones, Pearson, 2017

